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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/674,926
Filing Date: September 30, 2003
Appellant(s): OLSEN ET AL.

Michael J. Buchenhorner (Reg. No. 33,162)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8 June 2009 appealing from the Office action mailed 11 December 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interference

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

Subheading 1 states that the U.S. Patent number for Mirov is 6,838,824. This is incorrect. The correct U.S. Patent number for Mirov is 6,836,824.

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner.

The Examiner is withdrawing the rejection under 35 USC 103(a) to claim 32 as being unpatentable over Rudelic in view of Mirov and further in view of Atkinson.

The Examiner is withdrawing the rejection under 35 USC 103(a) to claims 34 and 35 as being unpatentable over Rudelic in view of Mirov and further in view of Kimura.

Claims 32, 34, and 35 are presently being indicated as containing allowable subject matter but are objected to for being dependent upon a rejected base claim.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2004/0255283	Rudelic et al.	12-2004
6,836,824	Mirov	12-2004
2003/0009705	Thelander et al	01-2003
6,029,249	Atkinson	02-2000
6,415,359	Kimura et al	07-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **21-22, 24-26, 29-31, 33, and 37-38** are rejected under 35 U.S.C. 103(a) as being obvious over Rudelic et al (U.S. 2004/0255283), hereinafter referred to as Rudelic, and in view of Mirov et al (U.S. 6,836,824), hereinafter referred to as Mirov.

As per independent claim **21**, Rudelic teach,

- first and second of levels of a non-volatile storage hierarchy, (Paragraph 0046: taught as the first and second flash memories).
- wherein accessing information in the first level consumes more energy than accessing information in the second level; and (Paragraph 0046: taught as the high performance first flash memory and rate of power consumption thereto).
- a processor configured for writing information to the second level of storage based on energy-conserving criteria and excluding storing only minimally used portions of information (Processor as shown in Figure 1 item 20 and as taught in Paragraph 0017 and further in paragraph 0046).

- wherein the energy-conserving criteria comprise system state information (Paragraph 0049: taught as performance metrics).

Rudelic is silent however on, wherein said system state information is selected from a type of energy source powering the system.

Mirov teach, wherein said system state information is selected from a type of energy source powering the system (Figure 18 as taught in Column 21 lines 19-57: taught as the level of power which anticipates the energy source).

Rudelic and Mirov are analogous art because they are from the same field of endeavor, namely power management in computing systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art, having both the teachings of Rudelic and Mirov before him/her, to implement the power management of Mirov into the system of Rudelic to exploit the benefit of reducing power consumption based on the level of power to prevent unnecessary consumption of power.

The motivation for doing so would have been that, a power supply without the features of the instant invention may continue to operate in the same mode, making the same amount of power available despite the fact that the computer system may not require the amount of power currently being made available. This excess power results in the unnecessary consumption of power (Mirov: Column 21 lines 30-35). The Examiner notes that combining Mirov with Rudelic would have yielded predictable results in offering the combination system the benefit of reducing power consumption.

Therefore it would have been obvious to combine Rudelic with Mirov to exploit the benefit of reducing power consumption based on the level of power to prevent unnecessary consumption of power to obtain the invention as specified in claims 21-22, 24-26, 29-31, 33, and 37-38.

As per dependent claim **22**, the combination of Rudelic and Mirov teach, wherein the energy-conserving criteria comprise criteria complied using a heuristic approach (Rudelic: Paragraphs 0048-0049 taught as the tracking and gathering of performance metrics).

As per dependent claim **24**, the combination of Rudelic and Mirov teach, further comprising a storage input/output subsystem and wherein the system state information comprises whether the storage input/output subsystem is using one or more specific files (Rudelic: Paragraph 0046: taught as the determination of minimally used portions and thus files of the operating system).

As per dependent claim **25**, the combination of Rudelic and Mirov teach, wherein the system state information is selected from the group consisting of: the storage input/output associated with one or more predetermined software applications; a sequence of storage input/output operations; observed interactions with the first level of the storage hierarchy and wherein the collection of heuristics infer the state of the second level of the storage hierarchy (Rudelic: Paragraph 0048: taught as the migration of code due to usage corresponding to the limitation of a sequence of storage input/output operations).

As per dependent claim **26**, the combination of Rudelic and Mirov teach, wherein the energy-conserving criteria comprise limiting use of parts of a file system (Rudelic: Paragraph 0046: taught as the migration of portions of the operating system off the first flash memory and thus limiting the use of the first flash memory).

As per dependent claim **29**, the combination of Rudelic and Mirov teach, wherein the system state information comprises at least one factor from among the following factors: the storage input/output data associated with the characteristics of the connection between the first and second levels of the storage hierarchy; the storage input/output data associated with characteristics of the connection between the system and at least one second level of the storage hierarchy; the proximity of the storage input/output to events that change the state of the at least one first level of the storage hierarchy; the proximity of the storage input/output to a previous interaction with at least one first level of storage hierarchy; an indication of a hard-disk drive spin-down event; and physical characteristics of the second levels of the storage hierarchy (Rudelic: Paragraph 0049: taught as the performance metrics).

As per dependent claim **30**, the combination of Rudelic and Mirov teach, wherein the system state information comprises physical characteristics of the second level of the non-volatile storage hierarchy (Rudelic: Paragraph 0049: taught as the performance metrics).

As per dependent claim **31**, the combination of Rudelic and Mirov teach, wherein the second level of the non-volatile storage hierarchy is implemented using Flash memory (Rudelic: Paragraph 0046).

As per dependent claim **33**, the combination of Rudelic and Mirov teach, wherein the processor is for removing information from the second level of non-volatile storage based on energy-conserving criteria (Rudelic: Paragraph 0048: taught as a code object promotion).

As per independent claim **37**, the combination of Rudelic and Mirov teach,

- two levels of non-volatile storage wherein a first level is managed and a second level is unmanaged wherein storing information in managed storage consumes less system resources than storing information in unmanaged storage, the method comprising: (Rudelic: Paragraph 0046: taught as the first and second flash memories)
- monitoring the system to determine whether the operating state of the system satisfies one or more energy-conserving criteria; and storing only strategically selected storage data in managed storage when the operating state of the system satisfies one or more energy-conserving criteria; (Rudelic: Paragraphs 0046-0049) and
- storing all storage data in unmanaged non-volatile storage when the operating state of the information processing system does not satisfy the one or more energy-conversing criteria; (Rudelic: Paragraph 0047 taken in combination with Mirov Column 21 lines 19-57). *The Examiner notes that when taken in combination, the combination of Rudelic and Mirov obviates that which is instantly claimed.*

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- wherein the energy-conserving criteria comprise system state information, and wherein said system state information is selected from a type of energy source powering the system (Mirov: Figure 18 as taught in Column 21 lines 19-57: taught as the level of power which anticipates the energy source).

As per independent claim **38**, the combination of Rudelic and Mirov teach, a computer readable medium comprising program instructions for: (Rudelic: Claim 12) monitoring a system to determine whether the operating state of the system satisfies one or more energy-conserving criteria; and storing only strategically selected storage data in managed non-volatile storage when the operating state of the system satisfies one or more energy-conserving criteria (Rudelic: Paragraphs 0046-0049); storing all storage data in unmanaged non-volatile storage when the operating state of the information processing system does not satisfy the one or more energy-conserving criteria; (Rudelic: Paragraph 0047 taken in combination with Mirov Column 21 lines 19-57: The Examiner notes that when taken in combination, the combination of Rudelic and Mirov obviates that which is instantly claimed) wherein the energy-conserving criteria comprise system state information, and wherein said system state information is selected from a type of energy source powering the system (Mirov: Figure 18 as taught in Column 21 lines 19-57: taught as the level of power which anticipates the energy source).

Claims **27-28** are rejected under 35 U.S.C. 103(a) as being obvious over Rudelic in view of Mirov, and further in view of Thelander et al. (U.S. 2003/0009705) hereinafter referred to as Thelander.

As per dependent claim **27**, the combination of Rudelic and Mirov teach the limitations as noted *supra*.

The combination of Rudelic and Mirov teach is silent however on, the system stores current user profiles and the system state information comprises whether storage input/output data are associated with a current user profile.

Thelander, the system stores current user profiles and the system state information comprises whether storage input/output data are associated with a current user profile (Paragraph 45 and Paragraph 48 and Paragraph 53).

Rudelic and Mirov, and Thelander are analogous art because they are from the same field of endeavor, namely power management in computing systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art, having both the teachings of Rudelic and Mirov, and Thelander before him/her, to implement the power management profiles of Thelander into the system of Rudelic and Mirov to exploit the benefit of multiple power profiles based on a user's preferences.

The motivation for doing so would have been that, the power management profile may include multiple power settings or power schemes with the same schedule, so that the user may select between different power settings or schemes to be implemented (Paragraph 45 and Paragraph 48 and Paragraph 53).

Further, it would have been obvious to implement different user profiles based on user preferences. Doing so would yield predictable results in offering the combination system the benefit of serving multiple users with different needs.

Therefore it would have been obvious to combine Rudelic and Mirov, with Thelander to exploit the benefit of multiple power profiles based on a user's preferences to obtain the invention as specified in claims 27 and 28.

As per dependent claim **28**, the combination of Rudelic, Mirov, and Thelander teach, wherein the system stores current user preferences and the system state information comprises whether storage input/output data are associated with current user preferences (Thelander: Paragraph 45 and Paragraphs 48-49 and Paragraph 53 in combination with Rudelic and Mirov).

(10) Response to Argument

35 USC § 103(a) Rejection of Claims 21-22, 24-26, 29-31, and 37-38
as being Unpatentable over Rudelic in View of Mirov

At pages 4-5 of the Appeal Brief filed 8 June 2009, with respect to subheading 1 under the heading Argument or the "Grounds of Rejection 1," Appellant argues:

"Mirov teaches a variable power supply that may be adjusted according to the requirements of the system. The variable power supply of Mirov does not control storage of information according to the power available. The teaching is just the opposite of what the claim requires, which is a processor that controls the writing of information to a lower energy consuming level of storage based on the type of energy source powering the system, such that when the energy source produces a low level of energy, a level of storage is used that consumes less energy."

The Examiner agrees that Mirov does not teach a processor that controls the writing of information as instantly claimed. The Examiner does however note that this appears to be a mischaracterization of the rejection as the Examiner has relied upon the primary reference of Rudelic to teach the claimed limitations. Rudelic teaches a processor that executes code to migrate minimally used portions of the operating system off of the first flash memory as found in Paragraph 0046. This in combination with Mirov obviates the claimed limitations.

With respect to the remainder of Appellant's arguments under subheading 1 which relies upon corresponding arguments presented with respect to independent **claim 21** the Examiner refers back to those arguments and responses presented *supra* regarding **claim 21**.

35 USC § 103(a) Rejection of Claims 27-28

as being Unpatentable over Rudelic in View of Mirov

At page 5 of the Appeal Brief filed 8 June 2009, with respect to subheading 2 under the heading Argument or the "Grounds of Rejection 2," Appellant argues:

"The Examiner concedes that Thelander does not teach or suggest the limitations of claim 27 but alleges that Thelander does teach the limitations."

The Examiner respectfully disagrees. The Examiner is unsure as to what is meant by Appellant's statement of, '*The Examiner concedes that Thelander does not teach or suggest the limitations of claim 27 but alleges that Thelander does teach the limitations.*' The Examiner noted in the rejection that the combination of Rudelic and

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Mirov was silent on the limitations that Thelander was being relied upon to teach. This again appears to be a mischaracterization of the rejection.

At page 5 of the Appeal Brief filed 8 June 2009, with respect to subheading 2 under the heading Argument or the "Grounds of Rejection 2," Appellant argues:

"A careful review of Thelander reveals that Thelander does not discuss a user profile at all and does not discuss that the system state information data are associated with a current user profile. The only profiles discussed in Thelander are a power management profile and a client profile database, not a user profile. See Thelander, paragraph [0048], and see also Abstract (an authorized party may configure and maintain a power management profile for each computer in the network). The discussion of the client profile interface does not refer to a user interface but rather to a client profile interface that is not the same or equivalent to the claimed user profile."

The Examiner respectfully disagrees. Thelander, Paragraph 0053, teaches that a power management profile that is to be implemented when a first user is using the computer and a different power management profile that is to be implemented when a second user is using the client computer. As there appears to be two profiles for two different users, Thelander teaches a user profile as instantly claimed.

At pages 5-6 of the Appeal Brief filed 8 June 2009, with respect to subheading 2 under the heading Argument or the "Grounds of Rejection 2," Appellant argues:

"Claim 28 requires that the system stores current user preferences. Thelander does not disclose any user preferences. Instead, at paragraph [0080] Thelander discusses "enforcement preferences" which are not the same as or the equivalent of user preferences."

The Examiner respectfully disagrees. Thelander, Paragraph 0048, teaches that the operating system may implement a default power setting or scheme for the scheduled period according to any desired criteria, such as having a preselected default setting or scheme, or using the setting or scheme most recently selected by the user. (Emphasis added). As these settings or schemes are selected by the user, the Examiner is relying upon these user selected settings or schemes to teach the user preferences as instantly claimed.

35 USC § 103(a) Rejection of Claim 32 as being Unpatentable

Over Rudelic in View of Mirov and Further in View of Atkinson

Appellant's arguments at page 6 of the Appeal brief under subheading 3 are moot in view of the Examiner's withdrawing of this rejection to **claim 32** as noted *supra*.

35 USC § 103(a) Rejection of Claims 7-9 and 20-22 as being Unpatentable

Over Rudelic in View of Mirov and Further in View of Kimura

Appellant's arguments at pages 6-7 of the Appeal brief under subheading 4 are moot in view of the Examiner's withdrawing of this rejection to **claims 34-35** as noted *supra*.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Matthew Bradley/

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